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14. ABSTRACT In the event of a nuclear attack in the United States, NORTHCOM would lead the DoD military response. At the moment, however, NORTHCOM is not prepared to provide optimal support in the consequence management of a yield-producing nuclear detonation within the United States. The lack of unity of command between Title 10 and Title 32 forces that would respond to a nuclear disaster will be a critical weakness. The CBRNE (Chemical, Biological, Radiological, Nuclear, and Explosive) Consequence Management Response Force (CCMRF, pronounced "sea smurf") is responsible for NORTHCOM's consequence management response at the tactical level. The transportation requirements for the CCMRF response to a nuclear disaster will be significant and may affect the timeliness of the DoD response. The USMC Chemical, Biological Incident Response Force (CBIRF) in Indian Head, MD provides the search and extract capability in nuclear contaminated areas for the CCMRF, but it is critically undermanned and too centralized. And finally, the length of the reserve mobilization process will need attention in order to provide useful reserve support.					
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Newport, RI

**CONSEQUENCE MANAGEMENT OF A YIELD-PRODUCING NUCLEAR
DETONATION ICONUS: IS NORTHCOM READY?**

By

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A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

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4 MAY 2009

Table of Contents

Abstract.....	iii
Introduction.....	1
Background.....	2
CCMRF.....	3
C2 Overview.....	5
NORTHCOM C2.....	5
C2 and the National Guard.....	6
Establishing Unity of Command.....	7
Establishing Unity of Effort.....	8
Additional C2 Options.....	9
C2 Regarding Interagency.....	10
CCMRF Mobility.....	10
Search and Extract Capability.....	11
Reserve Employment.....	14
Reserve Mobilization: Navy Example.....	15
Recommendations.....	17
Conclusion.....	18
Bibliography.....	19

Abstract

In the event of a nuclear attack in the United States, NORTHCOM would lead the DoD military response. At the moment, however, NORTHCOM is not prepared to provide optimal support in the consequence management of a yield-producing nuclear detonation within the United States. The lack of unity of command between Title 10 and Title 32 forces that would respond to a nuclear disaster will be a critical weakness. The CBRNE (Chemical, Biological, Radiological, Nuclear, and Explosive) Consequence Management Response Force (CCMRF, pronounced “sea smurf”) is responsible for NORTHCOM’s consequence management response at the tactical level. The transportation requirements for the CCMRF response to a nuclear disaster will be significant and may affect the timeliness of the DoD response. The USMC Chemical, Biological Incident Response Force (CBIRF) in Indian Head, MD provides the search and extract capability in nuclear contaminated areas for the CCMRF, but it is critically undermanned and too centralized. And finally, the length of the reserve mobilization process will need attention in order to provide useful reserve support.

Introduction

The threat of a nuclear attack in the United States is a real possibility and the consequences of such an act would be unlike anything this generation has ever seen. According to a RAND scenario analysis, a terrorist detonation of a 10 kiloton (KT) nuclear weapon in the United States is considered plausible and would likely cause devastation “beyond comprehension, orders of magnitude greater than the largest hurricanes or earthquakes experienced in modern times.”¹ In other words, the effects of a 10 KT nuclear detonation would dwarf the effects of Hurricane Katrina, the current standard for disaster response gone wrong. For comparison purposes, the nuclear bombs dropped in Hiroshima and Nagasaki during WWII were approximately 16 KT and 21 KT respectively.² In Hiroshima, there were 69,000 injuries and 66,000 deaths in a population of 225,000 while in Nagasaki there were 25,000 injuries and 39,000 deaths in a population of 195,000.³ The size of the nuclear detonation will affect the radii of the threat zones and the magnitude of the relief effort, but will not have much bearing on the capability and organizational focus of this paper. If a nuclear detonation occurs in the United States, it will be too late to prepare as preparations end with the detonation, and there may be no warning. Now is the time to think through these issues.

In any domestic disaster, U.S. Northern Command (NORTHCOM) will manage the federal military response, and a nuclear attack would undoubtedly mobilize the full efforts of the federal government including the military. At the moment, however, NORTHCOM is not prepared to provide optimal support in the consequence management of a yield-

¹ Charles Meade and Roger C. Molander, *Considering the Effects of a Catastrophic Terrorist Attack*, RAND Report, (Santa Monica, CA; Arlington, VA; Pittsburgh, PA: RAND, 2006), 2, 31.

² U.S. Department of Homeland Security, *Planning Guidance for Response to a Nuclear Detonation*, 1st ed., (Washington, DC: 16 January 2009), 19.

³ Atomicarchive Website, *The Atomic Bombings of Hiroshima and Nagasaki*, http://www.atomicarchive.com/Docs/MED/med_chp10.shtml (accessed 12 April 2009).

producing nuclear detonation within the United States. For the purposes of this paper, consequence management refers to the management of the human toll resulting from a nuclear detonation and does not include law enforcement. Consequence management is just one aspect of the larger incident management⁴ effort. This paper will examine several critical factors affecting NORTHCOM's nuclear consequence management capabilities and processes including an in-depth analysis of the command and control (C2) situation; response mobility; search and extract capability; and reserve mobilization. Medical capacity for the consequence management of a nuclear detonation will not be discussed, but it would certainly be strained and may be a topic for further research. This paper will also not be considering the consequence management of nuclear accidents or radiological weapons as neither of these is likely to produce the mass casualties that would provoke a DoD response.

Background

The Department of Homeland Security (DHS) was established by Presidential Executive Order 13228 on October 8, 2001 in response to the terrorist incidents of September 11, 2001. The function of DHS was intended to “coordinate the executive branch's efforts to detect, prepare for, prevent, protect against, respond to, and recover from terrorist attacks within the United States.”⁵ According to the DHS National Response Framework (NRF), the “Secretary of Homeland Defense is the principal Federal official for domestic incident

⁴ Incident Management: The broad spectrum of activities and organizations providing effective and efficient operations, coordination, and support applied at all levels of government, utilizing both governmental and nongovernmental resources to plan for, respond to, and recover from an incident, regardless of cause, size, or complexity. (Department of Homeland Security, *National Incident Management System*, December 2008).

⁵ U.S. President, Executive Order no. 13228, “Establishing the Office of Homeland Security and the Homeland Security Council,” *Federal Register* 66, (8 October 2001), 51812.

management...responsible for the coordination of federal resources utilized in the ...response to...major disasters, or other emergencies.”⁶

NORTHCOM was established October 1, 2002 “to provide command and control of DoD homeland defense efforts and to coordinate defense support of civil authorities;... [it] plans, organizes and executes homeland defense and civil support missions, but has few permanently assigned forces.”⁷ NORTHCOM is the geographic combatant command whose Area of Responsibility (AOR) encompasses North and Central America. NORTHCOM’s domestic area of responsibility includes the 49 continental states and Washington, DC; it does not include Hawaii, which is in U.S. Pacific Command’s AOR. In the event of a domestic emergency, DoD support is requested by the lead federal agency via, and approved by, the Secretary of Defense, or directed by the President of the United States.⁸ However, there are situations that would warrant a proactive response by the DoD as defined in the NRF, and a nuclear detonation in the continental United States (INCONUS) is one of them.⁹

CCMRF

NORTHCOM established its first CCMRF¹⁰ in FY 2009 with two other CCMRF units planned to be up and running in FY 2010 and FY 2011 respectively.¹¹ Each CCMRF is expected to draw on approximately 4,500 troops from all service branches, although the second two will be dominated by National Guard units.¹² “Each CCMRF will tap units that

⁶ U.S. Department of Homeland Security, *National Response Framework*, (Washington, DC: Office of the Secretary of Homeland Defense, January 2008), 25.

⁷ U.S. Northern Command, “About U.S. NORTHCOM,” <http://www.northcom.mil/About/index.html> (accessed 13 March 2009).

⁸ Steve Bowman, Lawrence Kapp and Amy Belasco, “Hurricane Katrina: DOD Disaster Response,” *CRS Report for Congress*, 19 September 2005, 3.

⁹ U.S. Department of Homeland Security, *National Response Framework*, 42.

¹⁰ CCMRF, pronounced “sea smurf,” is an acronym for CBRNE (Chemical, Biological, Radiological, Nuclear, and Explosive) Consequence Management Response Force.

¹¹ Seamus O’Connor, “New response teams for chem, nuke attacks, Guard, active duty from all branches could be tapped,” *Air Force Times*, Posted: Sunday 1 June 2008, http://www.airforcetimes.com/news/2008/06/airforce_ccmrfs_060108/ (accessed 13 March 2009).

¹² Ibid.

provide the capabilities most often called for in a CBRNE response, including airlift, medical, logistics and units specializing in biological or radiological identification and cleanup.”¹³ According to Lt Col Cunniff, USA, of NORTHCOM, “CCMRFs are intended to provide ‘a flexible force’ that can provide its various capabilities piecemeal or as a total force.”¹⁴ In other words, the CCMRF will be customized with the forces needed to best respond to the disaster at hand. In September 2008, the first CCMRF participated in *Vibrant Response*, a

consequence
management exercise
involving a simulated
10 KT nuclear
detonation with JTF-
Civil Support (CS)
providing the C2.¹⁵

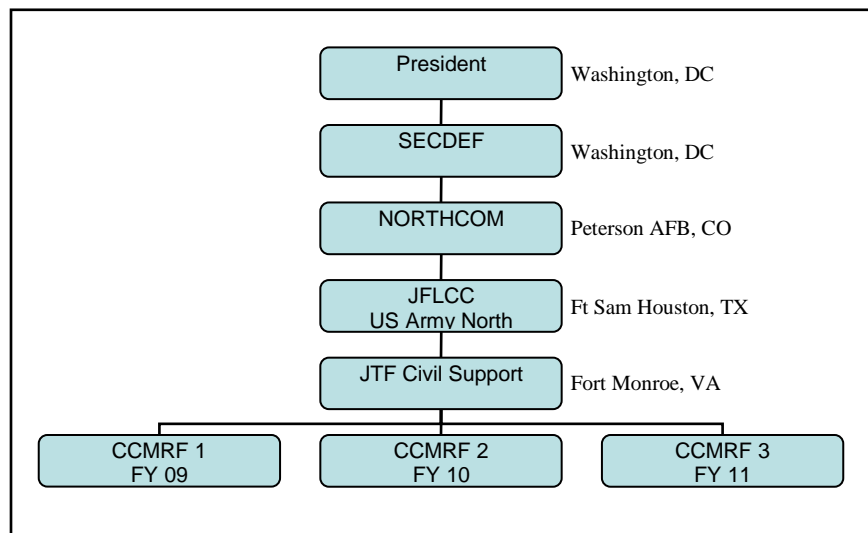


Figure 1

The chain of command

between NORTHCOM and the CCMRFs is depicted in Figure 1.

For victim extraction in nuclear (and chemical and biological) contaminated environments, the CCMRF has tagged the USMC Chemical, Biological Incident Response Force (CBIRF) stationed at Indian Head, MD.¹⁶ The CBIRF is one of only a few units permanently assigned to the CCMRF (i.e., not on a rotating basis).¹⁷ There are other CBRNE

¹³ Ibid.

¹⁴ Ibid.

¹⁵ “UNITS ASSIGNED TO CCMRF GAIN INSIGHTS FOR NEW RESPONSE MISSION,” *US Fed News Service*, Including *US State News*, 19 September 2008, <http://www.proquest.com/> (accessed 13 March 2009).

¹⁶ Ibid.

¹⁷ Gwyn Winfield, “CBRN-ER,” *CBRNe WORLD*, Winter 2008, 41, http://www.cbrneworld.com/pdf/08_winter_CBRNe_CBRN-ER.pdf (accessed 31 March 2009).

units that would likely materialize at the disaster site, but as we will see below, none are as capable as the CBIRF.

C2 Overview

A major concern regarding C2 is with the National Guard troops, on state active duty or activated under the authority of Title 32 USC, operating in the same area and for the same cause as DoD forces under the authority of Title 10 USC. State active duty and Title 32 forces would be answering to a specific state while the rest of the DoD Title 10 forces would be under NORTHCOM's operational control in a parallel command structure. The major criticism with this arrangement is that it violates the principle of unity of command. In this situation, one can only hope for unity of effort to achieve the objective, which is a risky proposition.

In a coalition, there is usually a lead nation – generally the nation with the preponderance of force. In most domestic disasters, the affected state has the lead and DoD provides assistance if requested. In the case of Katrina, there were two lead states (Louisiana and Mississippi) and no effective coordination between military command elements.¹⁸ This could be a real problem in a nuclear catastrophe. Unless this unity of command issue is resolved, less than optimal results can almost be guaranteed.

NORTHCOM C2

In the event of a yield-producing nuclear detonation in the United States, NORTHCOM would probably waste no time exercising its right to respond proactively as authorized in the NRF. NORTHCOM will always maintain operational control over its own assigned forces, which include U.S. Army North, JTF-CS, CCMRF, and the forces allocated

¹⁸ LTC Mike Petring, USAR, "Adapting Multinational C2 Doctrine to Domestic Operations," *ROA National Security Report*, November 2007, 53-54.

to CCMRF for disaster response. One of the biggest problems for NORTHCOM will be to effectively coordinate with the Title 32 forces on the scene. For smaller disasters, NORTHCOM may provide the state(s) with a JTF element as a supporting element.¹⁹ This may work well for a disaster much smaller than one caused by a nuclear detonation, or a disaster confined to a single state. For a larger disaster or a disaster that crosses state boundaries, however, this arrangement may not be adequate due to the evolving complexity of the effort. The immediate question will be whether there should be centralized federal control of all military forces²⁰ assigned to the consequence management that follows a nuclear detonation. Time is such a critical factor that relying on unity of effort when the situation will demand immediate coordinated action is a flawed course of action. There is definitely a strong case to be made for a single entity, such as NORTHCOM, to have operational control of all state and federal military personnel involved in the consequence management following a nuclear detonation. If NORTHCOM assumes this lead role, then it only makes sense that it should also be in control of non-military DoD personnel from supporting organizations such as the Defense Logistics Agency (DLA) and the Defense Threat Reduction Agency (DTRA).

C2 and the National Guard

The National Guard's most relevant asset in a nuclear consequence management scenario may be their Weapons of Mass Destruction Civil Support Teams (WMD-CST). Unfortunately, all of these units operate independently: "there is no specifically designed tactical or operational headquarters above the CST level."²¹ Consequently, there is no

¹⁹ U.S. Department of Homeland Security, *National Response Framework*, 68.

²⁰ Military forces refer to federal active duty and reserve forces and state National Guard forces.

²¹ James D Campbell, "Brigade Headquarters for National Guard Civil Support Teams: A Homeland Security Imperative," *Military Review*, 1 November 2007, 87-90, <http://www.proquest.com/> (accessed 28 March 2009).

operational-level coordination for “planning, training... operational response and... [with] other agencies in the homeland security arena.”²² In other words, there is no unity of command between WMD-CSTs, much less across NORTHCOM’s AOR. In fact, there is no established operational-level C2 above the state-level anywhere in the National Guard.

The Emergency Management Assistance Compact (EMAC) is an alliance between the states that “facilitates the sharing of resources, personnel and equipment across state lines during times of disaster and emergency.”²³ All states, DC, Puerto Rico and the U.S. Virgin Islands have signed on to the EMAC.²⁴ For its intended purpose, the EMAC alliance has proven to be effective,²⁵ but operational-level control between states has never been addressed. NORTHCOM, on the other hand, can be a tremendous force multiplier with the infrastructure and the experience to provide the operational-level control desperately needed in this scenario.

Establishing Unity of Command

One way to create unity of command between Title 32 and Title 10 forces would be to immediately federalize the National Guard forces needed for consequence management placing them under the operational control of NORTHCOM. Title 32 forces required for law enforcement and other incident management support would remain under Title 32 authority to avoid the perception of the federal military conducting law enforcement. This would eliminate the bulk of the parallel command structure between the state and DoD, thus streamlining C2 for consequence management. Establishing unity of command in this way would also circumvent the risk of personality conflicts interfering with the need for

²² Ibid.

²³ Naim Kapucu, Maria-Elena Augustin, Vener Garayev, “Interstate Partnerships in Emergency Management: Emergency Management Assistance Compact in Response to Catastrophic Disasters,” *Public Administration Review* 69, no. 2, (1 March 2009), 297-313, <http://www.proquest.com/> (accessed 1 April 2009).

²⁴ Ibid.

²⁵ Ibid.

cooperation and unity of effort. This course of action should be incorporated in the NRF now for application in the event of a nuclear detonation INCONUS. Otherwise, the primary obstacle will inevitably be state resistance leading ultimately to Presidential intervention, which will cost time.

Establishing Unity of Effort

One of the ways to help establish unity of effort is to place a National Guard officer simultaneously in Title 32 status, for the purpose of commanding Title 32 forces, and in Title 10 status under the C2 of NORTHCOM.²⁶ This concept was used during the G-8 Summit, the Democratic and Republican Conventions and Operation Winter Freeze to achieve unity of effort, however, in all cases “the distinction in terms of unity of command” was maintained.²⁷ It is not clear why this arrangement did not result in de facto unity of command if a National Guard officer was under the C2 of NORTHCOM, but it is clear that it was designed to improve unity of effort. The governing statute for this idea was forwarded in the FY 2004 National Defense Authorization Act (NDAA).²⁸ Rather than federalize a National Guard officer, an active duty officer could also be sworn-in to a state’s National Guard as a Title 32 asset to be used in the aforementioned capacity. This course of action was actually proposed to – and rejected by – the governor of Louisiana during the Katrina effort.²⁹

²⁶ Paul McHale, Assistant Secretary for Homeland Defense, “Testimony,” House Armed Services Committee, *Hearing on DOD Homeland Security Responsibilities before the House Armed Services Committee on Terrorism, Unconventional Threats and Capabilities*, 109th Cong., 17th sess., 15 March 2005, http://commdocs.house.gov/committees/security/has074260.000/has074260_0f.htm (accessed March 28, 2009).

²⁷ Ibid.

²⁸ Bowman, Kapp and Belasco, “Hurricane Katrina: DOD Disaster Response,” 10.

²⁹ Ibid., 11.

JTF-CS is responsible for C2 of the CCMRF during a CBRNE event.³⁰ JTF-CS is comprised of active duty, National Guard, reserve and civilian personnel and is commanded by a federalized National Guard officer,³¹ who may be able to serve this dual-hatted purpose in the event of a disaster relief effort where Title 32 and Title 10 forces are operating together. While this option is more complex and does not create unity of command, it does assure a higher degree of unity of effort and plugs into NORTHCOM's C2 structure.

Additional C2 Options

Another idea that was proposed, though rejected by Secretary of Defense Gates in 2007, was to authorize governors to command Title 10 active duty troops in addition to their own Title 32 National Guard forces in the event of a state disaster.³² This proposal may have satisfied the principle of unity of command for a disaster confined to a single state, but probably would not provide the unity of command required for consequence management that spans more than one state, or for consequence management training and preparations conducted beforehand. There would be fifty different command possibilities, with more than one chain of command if more than one state was affected. The NORTHCOM commander would have to adapt to one or more of these fifty command structures rather than all states adapting to a single NORTHCOM command structure. A governor in charge of an unfamiliar institution as complex and large as the active-duty military in its response to the consequence management of a nuclear detonation could be a recipe for failure. The counter-argument to all this is that each state is different and each state would require different approaches that only a governor would be qualified to coordinate. The refutation is that a

³⁰ U.S. Northern Command, "About US NORTHCOM," <http://www.northcom.mil/About/index.html#JTFCs> (accessed 28 March 2009).

³¹ Ibid.

³² Lolita C. Baldor, "Gates Rejects Emergency Command Proposal," *The Associated Press*, 9 May 2007, <http://www.washingtonpost.com/wp-dyn/content/article/2007/05/09/AR2007050901985.html> (accessed 26 March 2009).

NORTHCOM command structure would, in all likelihood, be adaptable enough to account for situational variations between states.

C2 Regarding Interagency

Interagency³³ personnel will probably pose the greatest challenge to C2, regardless of NORTHCOM's C2 role in the relief effort. Cooperation and patience will rule the day with these personnel in much the same manner as it does between other combatant commands and their coalition partners. Obtaining operational control of interagency personnel would be difficult because of their various authorities, restrictions and competing responsibilities. Unity of effort is the best that could be expected when the players answer to authorities from different organizations with startlingly different cultures, each one of which could choose to help or hinder the relief effort. Bottom line: coordination and unity of effort, not unity of command, is the goal with interagency personnel.

CCMRF Mobility

CCMRF mobility requirements will depend on the location of the nuclear detonation relative to the location of the forces required to make-up the CCMRF response. Nonetheless, deploying a single CCMRF would require significant transport³⁴ with up to 4,500 dedicated personnel, and additional non-dedicated forces as required. U.S. Transportation Command (TRANSCOM) would be the functional command tasked with most or all of this transportation³⁵ by road, rail, air or sea to the disaster area. There are several factors, however, that could limit transportation options following a nuclear detonation that must be considered. Some airports may be damaged or may be in the contamination zone. The next

³³ Interagency in this case refers to U.S. state and federal agencies and departments outside DoD, and Title 10 and Title 32 military forces, that would respond to a nuclear catastrophe for consequence management.

³⁴ MAJ David "Mike" Aitken, U.S. Army, NORAD USNORTHCOM HQ J55, e-mail to author, 5 April 2009.

³⁵ Chairman, U.S. Joint Chiefs of Staff, *Chemical, Biological, Radiological, Nuclear and High Yield Explosives Consequence Management*, (JP) 3-41, (Washington, DC: CJCS, 2 October 2006), II-10.

closest airport may require transportation via roads or rotary wing aircraft for the final leg to the command centers. The same applies to maritime ports. Electronics in the vicinity of ground zero may be damaged by the Electro-Magnetic Pulse (EMP) phenomenon resulting from nuclear detonations. EMP can affect airport and maritime communications, computers and even vehicle ignition systems. The higher the detonation occurs above ground level (air burst), the greater the EMP effects; a ground burst will attenuate the effects. Regardless of the height of detonation, however, the effects of EMP must be considered.

Rail transportation may be less affected by a nuclear disaster than other modes of transportation. Combining air lift for reaction speed with rail transport for mass movement may offer the best combination for CCMRF transport, but it would require the military to plan and prepare to take advantage of the rail option from the outset.

Another option to minimize the transportation distances is to pre-stage CBNR and associated disaster relief equipment at strategic sites across the United States, much like the Marine Corp Pre-Positioning Program in Norway (MCPN) does for wartime purposes. Storage containers should be transportable by all means.

Search and Extract Capability

Of all the capabilities needed by the CCMRF to deal with the aftermath of a yield-producing nuclear detonation, search and extract may be in the shortest supply. There are sufficient response assets available for nuclear consequence management efforts to detect, measure and predict radioactive fallout areas, and to advise decision-makers, but insufficient assets for victim extraction from a nuclear contaminated area.³⁶ While the CBIRF can detect and identify radiation hazards as other units can, they can also search for, extract,

³⁶ Mark L. Maiello and K.L. Groves, "Resources for nuclear and radiation disaster response," *Nuclear News*, September 2006, <http://www.ans.org/pubs/magazines/nn/docs/2006-9-3.pdf> (accessed 26 March 2009).

decontaminate and stabilize casualties in a radioactive environment.³⁷ According to Col Pollock, CO of the CBIRF, no other service provides this search and extract capability.³⁸

The RAND Corporation estimates that 150,000 people would require prompt medical attention in a scenario following a 10 KT nuclear detonation at a port in Long Beach, CA.³⁹ Keep in mind that approximately 180 degrees between the NW and SE of Long Beach is mostly unpopulated water; the casualty estimate would probably be much higher if it were to occur farther inland. As another example, a draft version of the DHS National Planning Scenarios estimates that there would be hundreds of thousands of casualties (includes deaths) following a 10 KT nuclear detonation in Washington, DC during a typical work day.⁴⁰

The problem is that there are less than 500 CBIRF personnel in the nation, and only about 80 of them are dedicated to casualty search and extract.⁴¹ These 80 CBIRF personnel comprise NORTHCOM's entire CBRN search and extract capability. Additionally, the centralized location of the CBIRF in Indian Head, MD makes it vulnerable to a nuclear detonation in Washington, DC and will affect its response time to a nuclear detonation on the west coast. There is no way to predict how many of the estimated casualties from a nuclear detonation would require extraction. Many of those still alive in the rubble would be suffering from more than the effects of a collapsed building. Radioactive fallout will take its toll on those not killed outright. Most of the search and extract will likely be concentrated in areas where trapped victims stand the best chance of surviving the radiation doses received up to that point. All other survivors will shelter in place or self-evacuate as instructed by

³⁷ Cpl Leslie Palmer, "Unique mission for a unique unit," 9 July 2008, <http://www.iimefpublic.usmc.mil/> (accessed 23 March 2009).

³⁸ Sara Wirtala Bock, "CBIRF: How the U.S. Marine Corps Has Responded to a New Generation of Warfare," *Leatherneck*, 1 January 2009, 42-46, <http://www.proquest.com/> (accessed 23 March 2009).

³⁹ Meade and Molander, *Considering the Effects of a Catastrophic Terrorist Attack*, 5.

⁴⁰ U.S. Department of Homeland Security, *National Planning Scenarios*, FOUO Version 20.1 DRAFT, (Washington, DC: Office of the Secretary of Homeland Defense, April 2005), 1-1.

⁴¹ Bock, "CBIRF: How the U.S. Marine Corps Has Responded," 42-46.

emergency broadcasts or as the situation dictates (e.g., inadequate shelter or immediate need for medical attention). At any rate, regardless of training and capability, it is absolutely clear that the CBIRF search and extract capacity will be overwhelmed with only 80 personnel.

The National Guard, reserve and other active duty forces could provide a source of manpower for search and extract, but they do not possess the required training. The National Guard's WMD-CSTs, for example, do not have any search and extract capability. As of December 2007, there were 53 WMD-CSTs (of 55 planned) throughout the nation and its territories⁴² with only 22 personnel on each WMD-CST.⁴³ Because these WMD-CSTs are dispersed around the nation, they may be among the first on the scene, but trapped victims in the fallout zone may have to wait for qualified search and extract forces to arrive before they can be rescued.

Time is critical when it comes to search and extract as our experience with earthquakes has shown. Data from 34 earthquakes worldwide between 1985 and 2004 revealed that no trapped survivors were found beyond 48 hours in 16 earthquakes and the average maximum time of rescue for trapped survivors of the remaining 18 earthquakes was 6.8 days; none of the 34 earthquakes had rescued trapped survivors (reliably reported) beyond 14 days.⁴⁴ In the 1988 Armenian earthquake, 90% of all rescues "occurred within the first 24 hours."⁴⁵ The first 48 hours after an earthquake is generally considered the "Golden 48 hours" as survival rates decrease significantly beyond that.⁴⁶ The same rule could be applied to the blast damaged areas following a nuclear detonation, taking nuclear radiation

⁴² "WEAPONS OF MASS DESTRUCTION-CIVIL SUPPORT TEAM CERTIFIED," *US Fed News Service, Including US State News*, 18 December 2007, <http://www.proquest.com/> (accessed 28 March 2009).

⁴³ Stew Magnuson, "In the Hot Zone," *National Defense*, 1 June 2008, 40-42, <http://www.proquest.com/> (accessed 28 March 2009).

⁴⁴ Anthony G. Macintyre, MD, Joseph A. Barbera, and Edward R. Smith, "Surviving Collapsed Structure Entrapment after Earthquakes: A 'Time to Rescue' Analysis," *Prehospital and Disaster Medicine* 21, no. 1, (January-February 2006), 1, 7-8, <http://pdm.medicine.wisc.edu/21-1%20PDFs/macintyre.pdf> (accessed 19 April 2009).

⁴⁵ *Ibid.*, 7.

⁴⁶ *Ibid.*, 8.

levels into consideration. The time to shift from rescue to recovery will be a judgment call based on various factors such as ambient temperature (hypothermia/hyperthermia) and the needs of non-trapped survivors versus available resources.⁴⁷ Additionally, the effects of nuclear radiation levels will complicate all rescue and recovery for first responders.

It is apparent that additional sources of trained manpower will be required for the search and extract effort in a nuclear contaminated environment. It is equally apparent that the National Guard is the logical choice since they will most likely be the first on the scene, and response time will be absolutely critical. Reserve forces cannot effectively respond in time to assist with search and extract as will be discussed below.

Reserve Employment

Approximately 70,000 military forces eventually massed on the scene for the Katrina disaster relief effort: over 50,000 National Guard and some 20,000 active duty forces.⁴⁸

Reserve participation was limited to relatively few volunteers because of a restriction on involuntary mobilization for disaster relief purposes in Title 10 USC § 12304(c),⁴⁹ however, § 12304(b) provides an exception when weapons of mass destruction are involved:

(b) Support for Responses to Certain Emergencies. — The authority under subsection (a) includes authority to order a unit or member to active duty to provide assistance in responding to an emergency involving —

- (1) a use or threatened use of a weapon of mass destruction; or
- (2) a terrorist attack or threatened terrorist attack in the United States that results, or could result, in significant loss of life or property.

Reserve forces could be involuntarily mobilized for the consequence management of a yield-producing nuclear detonation since it is considered a weapon of mass destruction as defined

⁴⁷ Ibid., 9.

⁴⁸ U.S. Government Accounting Office, *Hurricane Katrina: Better Plans and Exercises Need to Guide the Military's Response to Catastrophic Natural Disasters*, GAO-06-643 (Washington, DC: 15 May 2006), 2.

⁴⁹ Ibid., 3.

under Title 50 USC § 2302. However, involuntary mobilization of reserve forces under this section would be uncharted territory.

The speed of reserve mobilization and transportation to the scene of the disaster would be crucial to the consequence management of a yield-producing nuclear detonation. Unlike the mobilization of reserve forces for a war or major operation where a few weeks may be considered acceptable, or for a hurricane whose predicted path allows time for preparation and mobilization, a nuclear detonation would likely occur with no notice. Every passing minute exposes victims in the fallout zone to increased levels of harmful, possibly fatal, residual radiation. The ability to mobilize the reserve quickly will be critical to minimizing fatalities.

Reserve Mobilization: Navy Example

Navy reservists have 24 hours to report to the Navy Operational Support Center (NOSC – also known as a reserve center) from notification of mobilization. When the member arrives at the NOSC, it should take 7 to 10 calendar days for mobilization processing, including travel time.⁵⁰ The mobilization process begins at the reservist's NOSC and ends at one of the four Navy Mobilization Processing Sites (NMPS) throughout the country to transfer the member from the reserve to active status.⁵¹ According to CDR Nordhill, CO of NOSC Newport, transferring members from reserve to active status is something that could potentially be accomplished at an active duty Personnel Support Detachment (PSD) for those NOSC's with access to one.⁵² The estimated time for NMPS

⁵⁰ Chief of Naval Operations, "Navy Manpower Mobilization/ Demobilization Guide," OPNAVINST 3060.7B (Washington, DC: Department of the Navy, CNO, 25 April 2006), 3-1.

⁵¹ CDR Jim Nordhill, CO NOSC Newport, interview with author, 28 March 2009.

⁵² Ibid.

processing is 3 to 5 days⁵³ and a mass mobilization could easily test that estimate.

Conducting NMPS functions at a local PSD would save time and transportation costs to the NMPS and would help alleviate the burden on these NMPS chokepoints so they can concentrate on processing personnel from NOSC's that do not have access to an active duty PSD. Reservists mobilized in 7 to 10 days, will not be assisting in the search and extract effort. They will instead be assisting victims in their evacuation and after that, attending to the dead.

With the time it takes to mobilize a reservist, the most important step is wasting no time initiating the notification. A nuclear detonation would authorize a proactive response by NORTHCOM, but NORTHCOM may not know immediately what reserve personnel they need and may not have the requisite authorization. Whether the response is proactive or anticipated, NORTHCOM must be able to request any and all reserve centers to conduct the notification and activation process (even without specific orders or authorization), which includes everything short of NMPS processing. This will start the clock until NORTHCOM knows exactly which personnel it needs and has the authorization. For the reserve centers to prioritize the sequence of processing, NORTHCOM should provide some sort of preliminary intent. As soon as the reservists are cleared for mobilization, they can standby for orders, if they haven't arrived during the activation process. Of course orders should not be provided until there is a confirmed destination for the reservist – a problem that was widely reported in the media during the Katrina effort. Once orders are received, the reservist can have his or her status changed from reserve to active and be on their way.

⁵³ Chief of Naval Operations, "Navy Manpower Mobilization/ Demobilization Guide," OPNAVINST 3060.7B (Washington, DC: Department of the Navy, CNO, 25 April 2006), 3-1.

Navy reservists who volunteer can bypass the lengthy mobilization process by using the Active Duty for Training (ADT) option. The ADT request is initiated by the reservist online using the Navy Reserve Order Writing System (NROWS). The reservist can report to the disaster scene using drill periods until the ADT orders are approved.

Recommendations

Command and Control. NORTHCOM should be unambiguously identified as the lead agency in the consequence management of a yield-producing nuclear detonation. National Guard forces dedicated to the consequence management effort should be immediately converted to Title 10 and placed under NORTHCOM's operational control. This C2 arrangement should be placed into doctrine – including the NRF – to avoid confusion and to save coordination time from the start of the consequence management effort.

CCMRF Mobility. NORTHCOM must plan for the possibility that roads and airports may be unusable. It should consider and plan for the possibility of rail transportation to the scene of the disaster to supplement air lift. Consider pre-staging CBNR and associated disaster relief equipment at strategic sites around the United States to minimize transportation distances and time. Storage containers should be transportable by all means including rail.

Search and Extract Capability. Include CBRN search and extract training in more active duty units and as many National Guard units as possible to increase and de-centralize the national search and extract capability. This is the most critical deficiency for nuclear consequence management.

Reserve Mobilization. At first sign of a nuclear detonation, initiate immediate nationwide notification and activation for reserve mobilization. Develop mobilization plans

based on anticipated needs; procedures must be developed in advance to reduce mobilization time. For the USN, consider ADT for volunteers willing to initiate the drill/ADT option.

Conclusion

NORTHCOM is obviously taking the domestic nuclear threat very seriously. Establishing the CCMRF and conducting Exercise *Vibrant Response* reflect NORTHCOM's commitment to improving its nuclear consequence management capability. This paper has highlighted some of the critical factors affecting NORTHCOM's ability to provide optimal support in the consequence management of a yield-producing nuclear detonation INCONUS. Unity of command between Title 10 and Title 32 forces will be essential for a coordinated response. The CCMRF transportation requirements pose a challenge that must be addressed to improve NORTHCOM's response time. The U.S. search and extract capability is critically undermanned and far too centralized to provide effective support in a nuclear catastrophe. The reserve mobilization process was examined for just the Navy, but a similar understanding of other branches' processes can help NORTHCOM to leverage the reserve system to its advantage. The recommendations provided above address these critical factors with the goal of optimizing NORTHCOM's response to a nuclear detonation within the United States.

Bibliography

- Atomicarchive Website. "The Atomic Bombings of Hiroshima and Nagasaki." http://www.atomicarchive.com/Docs/MED/med_chp10.shtml (accessed April 12, 2009).
- Baldor, Lolita C. "Gates Rejects Emergency Command Proposal." *The Associated Press*, May 9, 2007. <http://www.washingtonpost.com/wp-dyn/content/article/2007/05/09/AR2007050901985.html> (accessed March 26, 2009).
- Bock, Sara Wirtala. "CBIRF: How the U.S. Marine Corps Has Responded To a New Generation of Warfare." *Leatherneck*, January 1, 2009, 42-46. <http://www.proquest.com/> (accessed March 23, 2009).
- Bowman, Steve & Kapp, Lawrence & Belasco, Amy. "Hurricane Katrina: DOD Disaster Response." *CRS Report for Congress*, September 19, 2005, 3-11.
- Bunn, George and Christopher F. Chyba. *U.S. Nuclear Weapons Policy*. Washington, DC: Brookings Institution Press, 2006.
- Campbell, James D. "Brigade Headquarters for National Guard Civil Support Teams: A Homeland Security Imperative." *Military Review*, November 1, 2007, 87-90. <http://www.proquest.com/> (accessed March 28, 2009).
- Homeland Security Presidential Directive/HSPD-5*, February 28, 2003.
- Kapucu, Naim, Maria-Elena Augustin and Vener Garayev. "Interstate Partnerships in Emergency Management: Emergency Management Assistance Compact in Response to Catastrophic Disasters." *Public Administration Review* 69, no. 2, (March 1, 2009), 297-313. <http://www.proquest.com/> (accessed April 1, 2009).
- Macintyre, Anthony G., MD, Joseph A. Barbera, Edward R. Smith. "Surviving Collapsed Structure Entrapment after Earthquakes: A 'Time to Rescue' Analysis." *Prehospital and Disaster Medicine* 21, no. 1, (January-February 2006), 1, 7-8. <http://pdm.medicine.wisc.edu/21-1%20PDFs/macintyre.pdf> (accessed April 19, 2009).
- Magnuson, Stew. "In the Hot Zone." *National Defense*, June 1, 2008, 40-42. <http://www.proquest.com/> (accessed March 28, 2009).
- Maiello, Mark L. and K. L. Groves. "Resources for Nuclear and Radiation Disaster Response." *Nuclear News*, September 2006. <http://www.ans.org/pubs/magazines/nn/docs/2006-9-3.pdf> (accessed March 26, 2009).
- Meade, Charles & Roger C. Molander. *Considering the Effects of a Catastrophic Terrorist Attack*, RAND Report. RAND: Santa Monica, CA; Arlington, VA; Pittsburgh, PA: RAND, 2006.

- O'Connor, Seamus. "New Response Teams for Chem, Nuke Attacks, Guard, Active Duty From all Branches Could be Tapped." *Air Force Times*, June 1, 2008. http://www.airforcetimes.com/news/2008/06/airforce_ccmrfs_060108/ (accessed March 13, 2009).
- Palmer, Cpl Leslie. "Unique Mission for a Unique Unit." July 9, 2008. <http://www.iimefpublic.usmc.mil/> (accessed March 23, 2009).
- Petring, Mike, LTC USAR. "Adapting Multinational C2 Doctrine to Domestic Operations." *ROA National Security Report*, November 2007, 53-54.
- "Units Assigned to CCMRF Gain Insights for New Response Mission." *US Fed News Service, Including US State News*, September 19, 2008. <http://www.proquest.com/> (accessed March 13, 2009).
- U.S. Congress. House. *Hearing on DOD Homeland Security Responsibilities before the House Armed Services Committee on Terrorism, Unconventional Threats and Capabilities*. 109th Cong., 17th sess., March 15, 2005. http://commdocs.house.gov/committees/security/has074260.000/has074260_0f.htm (accessed March 28, 2009).
- U.S. Department of Defense. *Strategy for Homeland Defense and Civil Support*. Washington, DC: Office of the Secretary of Homeland Defense, June 2005.
- U.S. Department of Homeland Security. *National Incident Management System*. Washington, DC: Office of the Secretary of Homeland Defense, December 2008.
- U.S. Department of Homeland Security. *National Planning Scenarios*, FOUO Version 20.1 DRAFT. Washington, DC: Office of the Secretary of Homeland Defense, April 2005.
- U.S. Department of Homeland Security. *National Response Framework*. Washington, DC: Office of the Secretary of Homeland Defense, January 2008.
- U.S. Department of Homeland Security. *One Team, One Mission, Securing Our Homeland: U.S. Department of Homeland Security Strategic Plan Fiscal Years 2008-2013*. Washington, DC: Office of the Secretary of Homeland Defense.
- U.S. Department of Homeland Security. *Planning Guidance for Response to a Nuclear Detonation*, First Edition. Washington, DC: January 16, 2009.
- U.S. Government Accounting Office. *Hurricane Katrina: Better Plans and Exercises Need to Guide the Military's Response to Catastrophic Natural Disasters*, GAO-06-643. Washington, DC: May 15, 2006.

- U.S. Navy. Office of the Chief of Naval Operations. "Navy Manpower Mobilization/Demobilization Guide." OPNAVINST 3060.7B. Washington, DC: Department of the Navy, CNO, April 25, 2006.
- U.S. Northern Command Website. "About U.S. NORTHCOM," (accessed March 13 & 28, 2009).
- U.S. Office of the Chairman of the Joint Chiefs of Staff. *Chemical, Biological, Radiological, Nuclear and High Yield Explosives Consequence Management*, (JP) 3-41. Washington, DC: CJCS, October 2, 2006.
- U.S. President. Executive Order no. 13228. "Establishing the Office of Homeland Security and the Homeland Security Council." *Federal Register* 66, October 8, 2001.
- U.S. President. *National Strategy for Homeland Security*. Washington, DC: White House, October 2007.
- "Weapons of Mass Destruction-Civil Support Team Certified." *US Fed News Service, Including US State News*, December 18, 2007. <http://www.proquest.com/> (accessed March 28, 2009).
- Winfield, Gwyn. "CBRN-ER." *CBRNe WORLD*, Winter 2008, 42.
http://www.cbrneworld.com/pdf/08_winter_CBRNe_CBRN-ER.pdf (accessed March 31, 2009).